

The perspective of community-dwelling older adults on a wellness motivation

theory based exercise intervention

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## **Background**

As the population of the United States ages, interventions to keep the American people healthy will have to change based on what is effecting the 65 and older population such as the preventable event of falling (Markle-Reid et al., 2015). Falls are the number one cause of injurious deaths in the 65 and older population (Centers for Disease Control and Prevention, 2011). When these falls do not cause death, they may cause fractures, traumatic brain injuries, lacerations, breaks, and/or a fear of falling (Bell et al., 2000). However, there have been many interventions that have been established as effective in reducing falls such as group exercise programs and at home exercise, yet fewer than 17% of older adults participate in recommended strengthening exercises regularly and fewer than 23% of older adults participate in recommended aerobic exercises regularly (WHO, 2007)

Despite strong evidence supporting physical activity can reduce falls, older adults are not participating as a majority (WHO, 2007). To address this gap, prior intervention research has targeted psychosocial determinants of physical activity, including motivational constructs, combined with evidenced based strength and balance protocols to examine if such strategies increase older adults' participation in recommended physical activity (Anderson et al., 2006).

The purpose of this study will be to explore a new intervention's engagement of motivational constructs social support, readiness, and self-regulation and its effect on physical activity. Purposeful physical activity has been found to be important in preventing falls (Gillespie et al., 2012), so motivating older adults to increase their physical activity using motivational strategies may help prevent falls and ultimately prevent disability and increase quality of life.

The primary aim of this qualitative study is:

- To explore community-dwelling older adults' perspectives about how the intervention worked or did not work to increase social support, readiness, and self-regulation for their participation in physical activity.

Because falls can be physically and socially devastating, identifying strategies that improve fall prevention interventions is a crucial problem for nurses to solve as they are in the unique position of promoting health and wellness among community-dwelling older adults. By examining the effectiveness of this intervention, nurses may be able to improve these promotion efforts.

## **Literature Review**

### **Physical Activity and Fall Prevention**

It is recommended by the American College of Sports Medicine and the American Heart Association that older adults participate in moderate aerobic physical activity for 30 minutes five days a week or 20 minutes three days a week if the exercise is vigorous, and muscle strengthening exercises at least 2 times per week (Haskell et al., 2007). Additional to conferring health benefits, programs that incorporate these recommended exercises and balance-challenging exercises have been found to be effective in preventing falls (Gillespie et al., 2012). Gillespie and his colleagues have also found that fall-reducing physical activity programs, delivered in group and home based settings, and containing strength and balance components, effectively reduce falls (Gillespie et al., 2012). Therefore, designing an intervention that includes a motivational component may elicit increases in older adults' self-directed physical activity and in turn, reduce falls.

## **Wellness Motivation Theory**

To improve efforts to promote fall-reducing physical activities, this new intervention included a motivational component based on the wellness motivation theory (WMT). WMT is a nursing theory that focuses on behavior focused on growth and rooted in a person's values (Fleury, 1996). Fleury has done extensive work with the WMT and has found that there is motivation in people's behavior because it means that they are on a path of growth and change. Mitchell also found that motivation is a complex process that assists people to achieve their dreams and goals by moving them out of the present (Mitchell, 1988). This is relevant among older adults' who report improving and maintaining their health is priority. Therefore, utilizing motivation as a component of a fall reduction and/or physical activity intervention may provide more long term results and/or increase participant engagement.

The WMT has three come domains. These domains include (1) social contextual resources, (2) behavioral change processes, and (3) action (See Figure 1) (Fleury, 1996). Social contextual resources or social context can increase or decrease physical activity initiation and/or maintenance in interventions. For example, not having a lot of support from friends and family when participating in physical activity can decrease motivation to participate in physical activity (McAuley et al., 2003). Additionally, some family members will encourage the older adult to "take it easy" which can discourage the older adult from participating in physical activity that reduce falls (WHO, 2007). Therefore finding adequate and supportive social support is imperative to an older adult's motivation to participate in fall-preventative physical activity.

The second domain of the WMT is behavioral change process. There are multiple processes that occur including creating and evaluating goals, self-regulation, self-knowledge, and motivation appraisal. The first process, self-knowledge, is a process that allows one to

understand their values, goals, hopes, potential growth, self-efficacy, expectations, and fears and how they relate to their health (Fleury, 1996). The second process in this domain is motivation appraisal. In this study, motivation appraisal is referred to as readiness. Assessing one's readiness to initiate a behavioral change requires appraisal that compares one's behavior to their resources and goals to ensure that it can be accomplished (Fleury, 1996). This process can be seen as evaluating barriers, strategizing how to overcome barriers, analyzing one's values, resources available to attain a goal, an assessment of one's skills and exploring concerns about physical activity and falling (McMahon, 2012). The third process, self-regulation, uses strategies to utilize action to accomplish a goal. These strategies could include monitoring one's behavior, judging individual performance, and participating in self-evaluation, and processing information selectively (Bellg, 2003). By being aware of these things, one is able to engage in behavioral action that will assist them with achieving their goal such as increased PA. The WMT posits that these three processes, or motivational constructs, together with social contextual resources, have the potential to facilitate action.

Action is the third WMT domain, defined as the initiation and maintenance of healthy behaviors, such as physical activity, and in turn improved health. Action is the result of an increase in the first two core concepts: awareness and use of community resources, social support, and contextual influences as well as behavioral change processes such as self-regulation and self-knowledge (McMahon, 2012). Evaluating this new intervention's effects on the WMT domains will help us understand if it works and how it works.

### **Study Model**

#### **Figure 1**



This conceptual model is based on the wellness motivation theory (WMT). The WMT posits that supportive social contexts and increases in behavioral change lead to increased healthy behaviors, such as physical activity. As highlighted in Figure 1, motivational constructs in the WMT include social support, readiness, self-regulation and outcomes in this study include the quantity of total physical activity (light, moderate, and vigorous intensities). This model does not propose any casual relationship between constructs, rather is posits the influence of motivational constructs on the outcome, PA. This study is exploring the relationship between the motivational constructs in the WMT and their effect on the outcome, physical activity.

### **Conceptual Definition of Terms**

For the purposes of this study, physical activity is defined as any bodily movement produced by the skeletal muscles that result in energy expenditure (Haskell et al., 2007). Older adults are defined as 70 years or older as defined by the parent study. The rationale for older adults to be defined as 70 or older is because after 74 is when older adults' falls start to increase exponentially. This study will use the World Health Organization's definition of a fall which is "inadvertently coming to rest on the ground, floor or other lower level, excluding intentional change in position to rest in furniture, wall or other objects" (WHO, 2007). In this study, self-

regulation is defined as, “Personal regulation of goal directed behavior or performance” (Umstatted et al., 2008). Perez and Fleury describe readiness as, “Readiness to initiate behavior change involves motivation appraisal as intention formation for goal-directed behavior, which is related to personal beliefs and values, identified information and resources, and goals” (2009).

### **Assumptions**

This study assumes that the interventions and outcomes will be able to be delivered as planned to community dwelling adults over the age of 70 years old. This study also assumes that all data was collected according to protocol by competent research assistants and the measures used in the study were valid and reliable.

### **Methods**

This a qualitative study that focuses on how an intervention worked, or did not work, to increase community-dwelling older adults’ physical activity. Data was obtained by a mixed-method parent study; a community-based randomized control trial that used a 2x2 factorial experimental design. In this parent study, one factor represented a receipt of interpersonal behavioral change strategies (No, Yes). The second factor represented receipt of intrapersonal behavioral change strategies (No, Yes). Examples of the interpersonal behavioral change strategies used were the facilitation of social support and friendly social comparison. Examples of intrapersonal behavioral change strategies used were the facilitation of goal-setting and barriers management. Both sets of behavioral change strategies targeted these WMT based motivational constructs: social support, readiness, self-efficacy, and self-regulation. Both sets of behavioral change strategies were combined with an evidence-based fall-reducing physical activity protocol, Otago (Gardner et al., 2001), which targets increased leg strength, balance, and

endurance. After participants were randomized into one of the four treatment conditions, participants were assigned to small groups comprised of 4-6 additional participants randomized to the same condition. Each group met weekly for 90 minutes, over the course of 8 weeks. Each weekly session included time for discussion and education consistent with the treatment condition as well as a weekly progression of the Otago Exercise Program (Gardner et al., 2001) to ensure participants were progressively mastering the exercises. Each participant was given a \$20 gift at the end of each data collection session and was invited to keep their Fitbits at the end of the study.

### **Sample Setting**

The parent study took place in the community at four community centers around Minneapolis and St. Paul metro areas. Participants were recruited using newspaper advertisements printed in community newspapers. When a participant indicated interest in the study, they were screened to ensure they met the entrance criteria. Those who qualified reviewed the purpose, procedures, risks and options of the study and provided written and verbal consent prior to enrollment. Enrollment criteria included, living independently in an urban community, having the ability to walk, having low-levels of physical activity, speaking English, not having a diagnosis of neurocognitive disorder or a score of <21 of the telephone version of the Mini-Mental State Exam, and being at least 70 years old. Older adults were excluded from the study if they have had an infection, an injury on an extremity, or surgery in the last six months, engaged regularly in recommended physical activity, had an inability to walk, with or without a walking aid, and/or had a diagnosis of neurocognitive disorder. A total of 102 participants were enrolled in the study between April, 2014 and September, 2015. The mean age of participants was 79; a majority of the participants were women (74%). The current study purposively sampled 25 of the

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102 participants, based on their randomization to the condition that included both interpersonal and intrapersonal behavioral change strategies. This study was approved by the University of Minnesota's Institutional Review Board (#1402S47802).

### **Measures**

A guide was used to conduct 25 semi-structured interviews with 9 main questions and related probes 6 months post-intervention. Each question was selected to reflect participants' experiences with motivational constructs targeted by the intervention. Interviewers were trained to conduct semi-structured interviews.

### **Data Collection**

Six months after the 8-week intervention was completed, 25 participants assigned to the condition that included both interpersonal and intrapersonal behavioral change strategies participated in semi-structured interviews to discuss the intervention. The purpose, procedures, risks and options of the portion of the study were reviewed again with participants to ensure their consent continued. Interviews were conducted in the community center where their intervention took place, was audiotaped by the interviewer and professionally transcribed. Participant privacy was protected using their study number in place of their name. Additionally, each participant was assured that all of the data used in the study was in a locked area with no identifying information linked to the data.

### **Data Analysis**

The audiotaped and transcribed narrative data from interviews was stored, managed and analyzed using NVivo software. The narrative data was then condensed using codes and categories co-created by two research assistants and the primary investigator. Categories were

compared visually using matrices organized by engagement (or lack thereof) in each motivational construct and indications of increased physical activity post-intervention. After the matrices were organized, themes were identified.

## Results

**Table 1**

<b>Wellness Motivation Theory Component</b>	<b>Engagement in Intervention</b>	<b>Impact on Outcome (Physical Activity)</b>
<b>Social Support</b>	Small group size	Increased PA
	Motivating educator	Increased PA
	Connection with group members	Increased PA
	Encouraging family and friends	Increased PA
	Discouraging family and friends	Decreased PA
	Encouraging health care providers	Increased PA
	Access to community resources	Increased PA
	Positive public perception	Increased PA
<b>Readiness</b>	Interested in exercise	Increased PA
	Have a reason to exercise	Increased PA
<b>Self-efficacy</b>	Access to right equipment	Increased PA
	Access to safe facilities/environment	Increased PA
	Unsure how to overcome barriers	Decreased PA
	Plan to overcome barriers	Increased PA
<b>Self-regulation</b>	Monitor exercise with Fitbit Steps	Increased PA
	Monitor exercise with how they feel	Increased PA

	Positive mental mindset	Increased PA
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Table 1 summarizes the characteristics found in the 25 post-intervention interviews and the results of the primary aim. These characteristics were organized according to their corresponding WMT construct and evaluated for their impact (Increased, Decreased) on action: physical activity.

A variety of themes emerged when analyzing this data. The first theme that emerged was that positive interactions with one's social network help to increase PA. Along with a supportive social network, having access to a safe environment and safe equipment increases PA. Additionally, engagement in physical activity is enhanced when one engages in self-evaluation of 1) steps achieved and 2) effects of personal health and well-being. Another theme that emerged was that increased PA precipitates positive mental mindsets which in turn, motivates more PA. Having a reason to exercise such as wanting to remain independent also is very motivating to community dwelling older adults. Lastly, self-efficacy to overcome environmental factors such as weather remains tenuous.

***Social Support:*** Participants mentioned a wide variety of social support. Forms of social support that increased physical activity included support from family and friends, healthcare providers, and the public. Children were especially supportive to most participants as explained by one participant, *“My daughter certainly wants me to keep moving, and my son doesn't live in town, but he wants me to keep moving.”* The only scenario in which a participant's child was not supportive of increased PA was if the participant had fallen in the past and they were worried it increased their risk for a fall to happen again.

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The participants also really enjoyed the small intervention groups and the camaraderie and accountability the group size provided. One participant described it as, *“If we were in a big class and just sitting there listening it wouldn't have been as meaningful or it would be like just another lecture. This way, it was very interactive and meaningful.”* The participants also noted the importance of community resources as a catalyst to increased physical activity and participation in the intervention. The participants most often noted the ease of access to the intervention. They valued that the site was close to where they lived and that they could get to it by walking or public transportation. One participant used the bus and stated, *“Yes, the location is good. It was easy-- I don't drive anymore, but it was right on the bus line.”*

**Readiness:** Many participants expressed that their interest in PA was the reason that they participated in the intervention. These participants also enjoyed having a reason to leave their homes and have a reason to exercise. One participant said, *“I was looking for something to do besides staying in my apartment and I needed to exercise.”* Other participants were ready to start an exercise regimen because they were not feeling healthy and wanted to actively improve this part of their life—*“Physically I was just feeling terrible. Had no energy, going back and forth to the doctor, wondering why. And I felt that if I would participate in the Ready Steady program there would be something in it to help me gain more energy and more strength.”* Even though participants discussed methods used to monitor their physical activities, most participants did not discuss specific goals. Most statements were generally related to health or independence, such as, *“I want to remain independent”*.

**Self-efficacy:** The most noted component of self-efficacy that the participants experienced was having a safe place to exercise and having the right knowledge and equipment. The most used form of exercise was walking and the second was exercising at a community

center. The intervention also engaged self-efficacy components as evidenced by the results that found that strong community infrastructure and resources increased physical activity. If participants felt that it was safe to walk in their neighborhood, both because there was not any ice on the sidewalk and it was maintained well, and that it was a low crime, their physical activity increased.

Some participants were able to identify barriers, but still were not able to overcome them. For example, one participant stated, “*Winter I think is probably the biggest impediment because I am afraid of falling on the ice.*” When participants were unable to overcome a barrier, it decreased their PA, but when they were able to use the strategies discussed to overcome them, their PA increased.

***Self-regulation:*** Of all of the self-regulation strategies engaged during the intervention, monitoring exercise using steps measured by a Fitbit was the most used method by participants. Participants noted that monitoring their steps using a Fitbit was motivating. One participant stated, “*Yes I checked it there every day and it went up and up and up. That's what kept me going. I said tomorrow it'll go further.*” Other participants monitored their health by how they were feeling or by their level of independence. “*I am able to do so much more, I can keep—I want to stay independent for as long as possible.*” Another strategy that participants used to stay motivated was maintaining a positive mental mindset—“*in order for me to get to the point I need to be at in my life, or to be able to do things I want to in my life, I have to do it myself. So that helps to motivate me to keep working harder.*” Based on this data, it is clear that self-regulation could play an important role in the initiation of PA as well as the maintenance of a PA regimen with older adults.

## **Discussion**

The purpose of this qualitative study was to explore older adults' perceptions about how a WMT-based intervention worked. Overall results showed that each component in the intervention successfully engaged the targeted motivational constructs, particularly social support and self-regulation. Additionally, as each motivational component was engaged, participants increased their physical activity. Themes that emerged from the content analysis of narrative data illustrate how the intervention engaged targeted motivational constructs and links those constructs to self-reported participation in physical activity. The results were consistent with prior research and also gave additional insights related to relevance of operationalizing WMT constructs within an intervention.

Consistent with this study, additional literature has found that families encouraging older adults to take it easy (WHO., 2007) and lack of social support from family and friends can decrease physical activity (McAuley et al., 2003). Additionally, results from prior research show that even if older adults have health concerns or are going through a life transitions, pursuing a goal is still a priority (Shearer et al., 2010). Therefore, by increasing the engagement of the intervention related to goal setting, physical activity may be increased at a larger rate. Findings related to self-efficacy are also consistent with the literature that has found safe and crime free neighborhoods have a positive influence on increased physical activity (Brownson et al., 2001). Findings in the literature also support the statement that self-regulation increases the motivation for physical activities that reduce fall risk in older adults (McMahon, 2012). Therefore, the findings of this qualitative study are consistent with the literature and have reinforced the findings.

### **Limitations**

Due to the qualitative nature of the study, the researchers cannot make inferences about the data as the findings may be unique to the study population. Additionally, the researchers did not have any pre-intervention data which may have provided a broader illustration of how the intervention worked to change the motivational constructs it targeted. However, the intent of this study is to begin to understand the perspectives of participants about what worked with the study and what did not work with the study as their input will impact future quantitative studies.

### **Implications**

This qualitative study will provide a variety of implications for further studies. Participant interviews have proven that a WMT theory based exercise intervention can lead to increased physical activity in community-dwelling older adults. Additionally, combining a motivation component with a fall reduction program is effective and also leads to increased physical activity. Although it was not measured in this study, this increase in physical activity may have led to a decrease in falls as well which could be measured in a future study for additional implications. Specifically related to the WMT based intervention, this study has shown that self-regulation and social support have the largest impact on physical activity. Therefore, in future interventions, investigators may want to consider giving the older adults a monitoring device because the participants stated that it provided a lot of motivation and they enjoyed using it. Investigators may also want to consider helping participants identify people in their lives to use for social support when trying to achieve a health related goal. One change that could be made to future interventions would be to further emphasize overcoming barriers. Because participants did not feel confident when overcoming barriers such as winter weather, future interventions will have to readdress the delivery of this information.

There are also implications for nurses who work with community-dwelling older adults that this study can offer. First, when working with community-dwelling older adults, it is important to be supportive and encouraging towards them and the goals they are hoping to accomplish. Because many of the participants noted the instructor as one of the key pieces of motivation to exercise, nurses need to realize the impact that they have on their patients. Additionally, because patients noted the importance of social support, nurses could suggest that their patients work with their children, partner, health provider, or friend to achieve a health related goal. Lastly, self-regulation strategies assisted the most participants when achieving their goals, so nurses working with the community-dwelling older adults could help their patients with goal setting, or suggest self-monitoring techniques to assist their patients to a healthier lifestyle.

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